NEW ENGLAND
COMMON ASSESSMENT PROGRAM

Released Items
2005

Grade 5
Mathematics
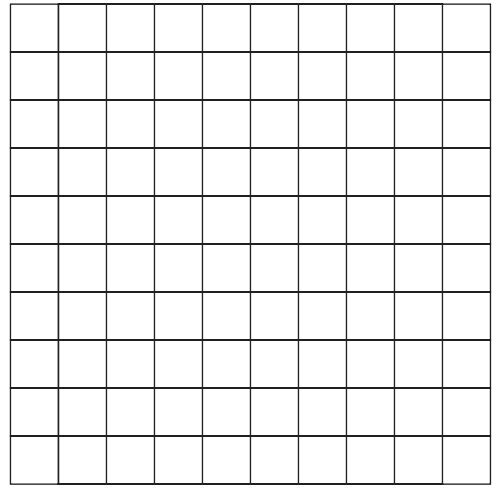
Mathematics

❶ Look at these blocks.
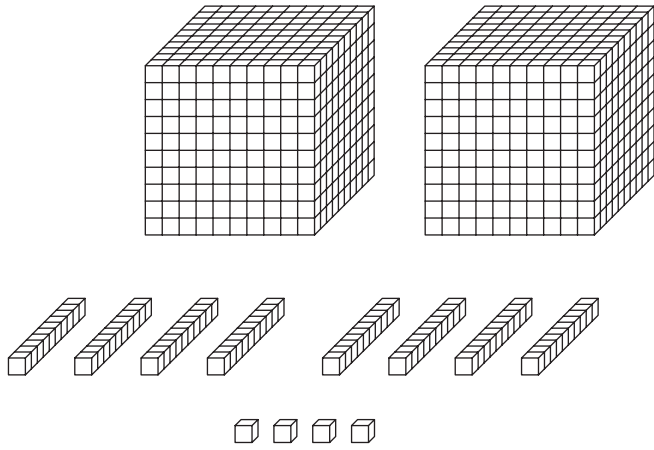
Key

□ represents 1 unit

What number do the blocks represent?

A. 284
B. 2084
C. 2804
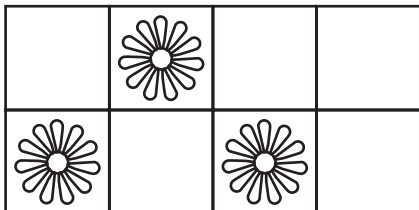D. 2840

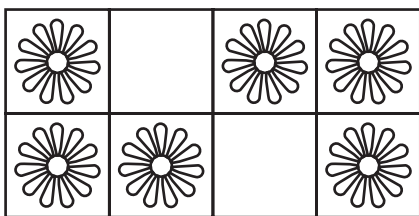**❷** The grid below represents one dollar.

How many ☐ represent 6 dimes?

A. 66
B. 60
C. 16
D. 6

3 In which design do $\frac{3}{5}$ of the tiles have a picture of a flower?
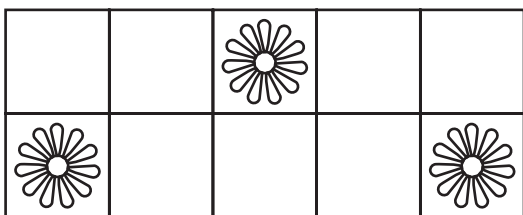
A.

B.

C.

D.
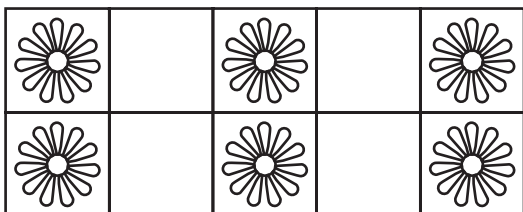
4 The students at Maple Grove School are selling flowers. Their goal is to sell 1500 flowers.

- On the first day, the students sold 547 flowers.

- On the second day, the students sold 655 flowers.

How many flowers must the students sell on the third day to meet their goal?

A. 298
B. 308
C. 1202
D. 2702

5 The typical wingspan of a snowy owl is 4.8 feet. The typical wingspan of a bald eagle is 6.7 feet. How much longer is the typical wingspan of a bald eagle than the typical wingspan of a snowy owl?

A. 10.5 feet
B. 2.9 feet
C. 2.1 feet
D. 1.9 feet

6 Mr. Hanson makes frames. In which frame is the identified angle more than 90°?

A.
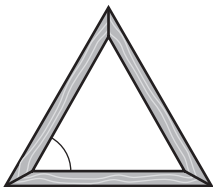
B.
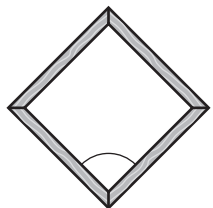
C.

D.

7 Use your ruler to answer this question. The picture below shows the floor plan of part of a house.

Floor Plan

Dining Room

Kitchen

Living Room

?
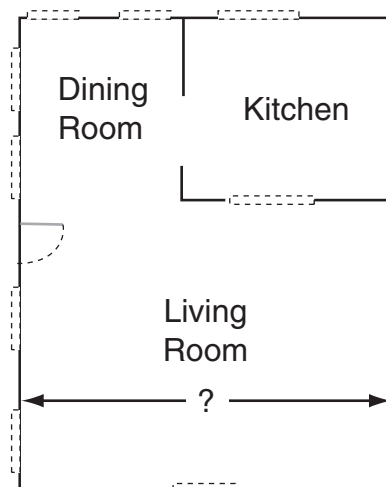
| **Scale** |
| 1 cm represents 4 ft |

What is the width of the living room?

A. 9 feet

B. 14 feet

C. 20 feet

D. 25 feet

8 Look at this pattern.

5, 6, 8, 11, 15, 20, ___, ___
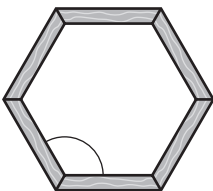
What are the next two numbers in the pattern?

A. 25, 30
B. 25, 31
C. 26, 32
D. 26, 33

9 Mr. Farrell uses the expression $50 \times n$ to calculate the weight (in pounds) of n crates. How much would 20 crates weigh?

A.   70 pounds
B.   100 pounds
C.   700 pounds
D. 1000 pounds

10 The bar graph below shows the average life span of some animals.

Life Span of Animals
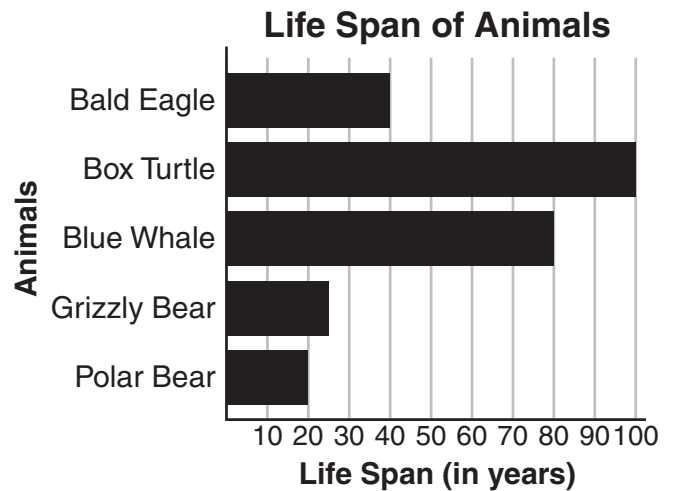
Which animal has an average life span that is five times longer than the average life span of a polar bear?

A. bald eagle
B. box turtle
C. blue whale
D. grizzly bear

⑪ Part of a ruler is shown below.

inch

Rachel is making a bead necklace. The table below shows the width of the two types of beads Rachel is using.

Type of Bead	Width of Each Bead
Round	$\frac{2}{8}$ inch
Square	$\frac{3}{8}$ inch

What is the width of 2 round beads and 1 square bead placed side by side?

⑫ The scale shown below is balanced.

Sand

The bag of sand weighs 18 pounds. Each of the cubes has the same weight. How many pounds does one cube weigh?

❸ Sue made up these clues for her mystery number.

- The mystery number is a multiple of both 3 and 4.
- The mystery number is greater than 20 and less than 30.

What is Sue's mystery number? Show your work or explain how you know.

❹ Mona has 5 dogs.

- The oldest dog is 10 years old.
- The median age of the dogs is 6 years.
- The mode of the dogs' ages is 2 years.

Give one possible list of the ages of Mona's dogs from the youngest to the oldest.

⓯ The picture below shows the shape of a garden.

Garden

1 ft

1 ft

a. What is the perimeter of the garden? Label your answer with the correct unit of measure.

b. What is the area of the garden? Label your answer with the correct unit of measure.

c. What is the perimeter of a rectangle that has the same area as the garden? Show your work or explain how you know. Label your answer with the correct unit of measure.

Grade 5 Mathematics Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Calculator Allowed	✓	✓	✓			✓	✓	✓	✓	✓				✓	✓
Content Strand[1]	NO	NO	NO	NO	NO	GM	GM	FA	FA	DP	NO	FA	NO	DP	GM
GLE Code	4-1	4-1	4-2	4-4	4-4	4-1	4-5	4-1	4-3	4-1	4-3	4-4	4-4	4-2	4-6
Depth of Knowledge Code	2	2	2	2	1	1	1	2	1	2	2	1	2	3	2
Item Type[2]	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	SA	SA	CR
Answer Key	B	B	D	A	D	D	C	D	D	B					
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4

[1]Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

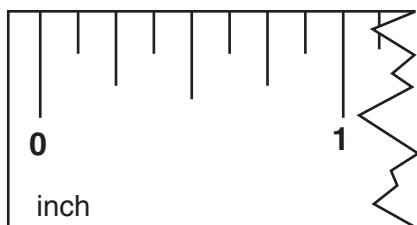[2]Item Type: MC = Multiple-Choice, SA = Short Answer, CR = Constructed Response

NEW ENGLAND
COMMON ASSESSMENT PROGRAM

**Released Items
Support Materials
2005**

**Grade 5
Mathematics**

11 Part of a ruler is shown below.

Rachel is making a bead necklace. The table below shows the width of the two types of beads Rachel is using.

Type of Bead	Width of Each Bead
Round	$\frac{2}{8}$ inch
Square	$\frac{3}{8}$ inch

What is the width of 2 round beads and 1 square bead placed side by side?

Scoring Guide:

Score	Description
1	Student correctly gives the width of the three beads, $\frac{7}{8}$ **(inch)**.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Score Point 1 (Example A)

$$\frac{2}{8} + \frac{2}{8} + \frac{3}{8} = \frac{7}{8}$$

Although included and correct, work is not necessary for credit.

Student correctly gives the width of the three beads. (Units are not necessary for credit.)

Score Point 1 (Example B)

$$\frac{7}{8} \text{ inches}$$

Student correctly gives the width of the three beads.

SCORE POINT 0 (EXAMPLE A)

$$\frac{7}{16}$$

Student's answer is incorrect.

SCORE POINT 0 (EXAMPLE B)

$$\frac{8}{2} \text{ inches}$$

Student's answer is incorrect.

⓬ The scale shown below is balanced.
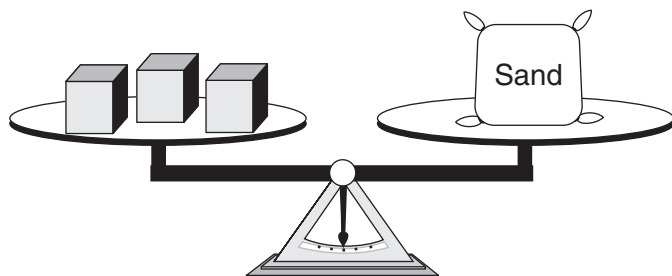
The bag of sand weighs 18 pounds. Each of the cubes has the same weight. How many pounds does one cube weigh?

Scoring Guide:

Score	Description
1	Student correctly answered, **6 (pounds)**.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Score Point 1 (Example A)

Each cube will weigh 6 pounds.

Student's answer is correct.

Score Point 1 (Example B)

6

Student's answer is correct. (Units are not necessary for credit.)

SCORE POINT 0 (EXAMPLE A)

They all together way 54 pounds.

Student's answer is incorrect.

SCORE POINT 0 (EXAMPLE B)

Sand = 18

Cubes = ?

3)⁶18
↑
answer

Student's answer, "3," is incorrect.

⓭ Sue made up these clues for her mystery number.

- The mystery number is a multiple of both 3 and 4.
- The mystery number is greater than 20 and less than 30.

What is Sue's mystery number? Show your work or explain how you know.

Scoring Guide:

Score	Description
2	Student correctly answered, **24**, with work shown or explanation given.
1	Student gives correct answer, but no work or explanation. OR Student gives an answer that is a multiple of 3 and 4 (other than 24).
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Sample Response:

Multiples of 3 less than 30: 3, 6, 9, 12, 15, 18, 21, 24, 27

Multiples of 4 less than 30: 4, 8, 12, 16, 20, 24, 28

The only number that is in both lists and between 20 and 30 is 24.

SCORE POINT 2 (EXAMPLE A)

(24) is Sue's mystery number.

4 ✳ 6 = 24   those
3 ✳ 8 = 24 ← are the
only ones

24 is less
than 30 and
more than 20.

Student shows appropriate work, and answer is correct. (2 points)
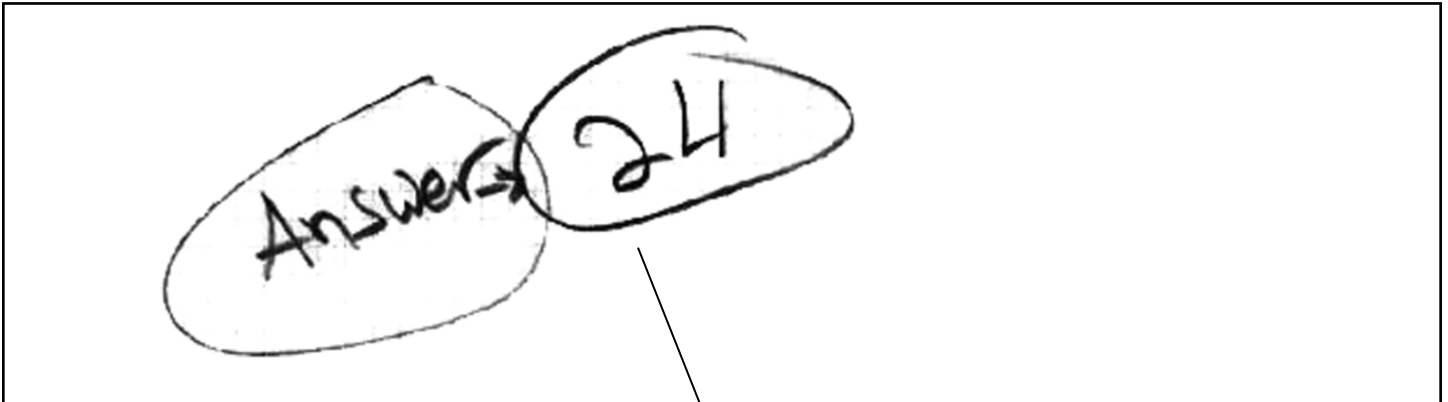
SCORE POINT 1 (EXAMPLE A)

Mystery number: 24

I tryed different numbers until I found the right one.

Student's answer is correct (1 point) but explanation is not sufficient (0 points).
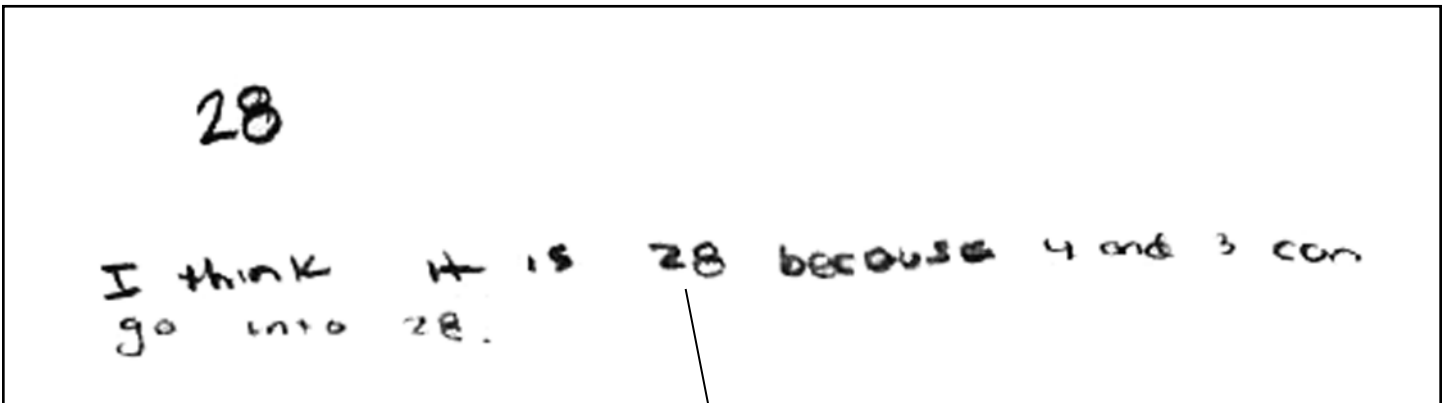
8

SCORE POINT 1 (EXAMPLE B)

Answer→ 24

Student's answer is correct (1 point) but work/explanation is missing (0 points).

SCORE POINT 0 (EXAMPLE A)

28

I think it is 28 because 4 and 3 can go into 28.

Student's answer is not correct since it is not a multiple of both 3 and 4. (0 points)

SCORE POINT 0 (EXAMPLE B)

20 21 22 23 24 25 26 27 28 29

it is 21 because if   and 3 and 4
yo do 3×4 it is 12
turn it around you get
21

Student's answer and strategy are
not correct. (0 points)

14 Mona has 5 dogs.

- The oldest dog is 10 years old.

- The median age of the dogs is 6 years.

- The mode of the dogs' ages is 2 years.

Give one possible list of the ages of Mona's dogs from the youngest to the oldest.

Scoring Guide:

Score	Description
2	Student gives a list of five ages that has the correct mode, median, and oldest age.
1	Student gives a list that has two out of the three measurements correct.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Sample Response:

2 years, 2 years, 6 years, 7 years, 10 years

Note:

- Do not penalize for a list of ages from oldest to youngest or a nonsequential list.

- Accept any answer in the form: 2 years, 2 years, 6 years, ☐ years, 10 years (where ☐ = 7, 8, or 9).

SCORE POINT 2 (EXAMPLE A)

2, 2, ⑥, 9, 10   6 is the median

2 is the mode

The oldest dog is 10 years old.

> Student gives a list of five ages that has the correct mode, median, and oldest age. Note: Student does not need to show how to determine the median to receive credit. (2 points)

SCORE POINT 2 (EXAMPLE B)

2, 2, 6, 7, 10

> Student gives a list of five ages that has the correct mode, median, and oldest age. (2 points)

Score Point 1 (Example A)

10 years old (the oldest)

6 years old (the median age)

2
2 } years old (the mode age
2

2,2,2,6,10

Student gives a list of five ages that has the correct mode and oldest age but an incorrect median. (1 point)

Score Point 0 (Example A)

I counted by 2 and got it. It is 8 and 4.
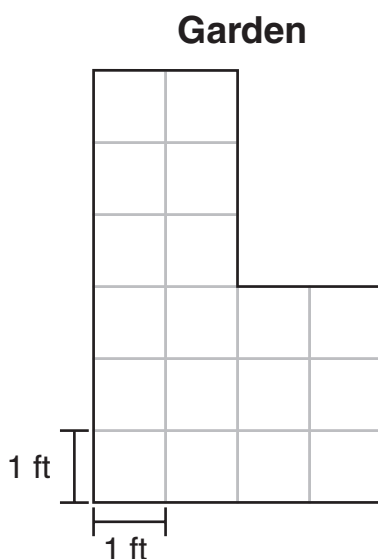
Student's response is irrelevant. (0 points)

Score Point 0 (Example B)

age's two threw 10.

Student's response is incorrect because it does not provide a list of five ages. (0 points)

⓯ The picture below shows the shape of a garden.

Garden

1 ft

1 ft

a. What is the perimeter of the garden? Label your answer with the correct unit of measure.

b. What is the area of the garden? Label your answer with the correct unit of measure.

c. What is the perimeter of a rectangle that has the same area as the garden? Show your work or explain how you know. Label your answer with the correct unit of measure.

Scoring Guide:

Score	Description
4	4 points
3	2½–3½ points
2	1½ or 2 points
1	½ or 1 point
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Training Notes:

Part a: 1 point   for the correct answer, **20 feet**

Part b: 1 point   for the correct answer, **18 square feet**

Part c: 2 points   for any correct perimeter of a rectangle with an area equal to 18 square feet or a
                      correct answer based on incorrect part b with work shown or explanation given
                      OR
        1 point   for the correct perimeter, no work shown or explanation given
                      or
                      for correct strategy shown in solving the problem, but there is a computation error

Notes:
- A correct strategy in part c could be a diagram of a rectangle with area equal to 18 or based on part b.
- If student does not indicate appropriate units or omits units in answers to parts a, b, and/or c, deduct ½ point per part before awarding final score.

Sample Responses:

Part c: 1 by 18 with perimeter 38 feet
           2 by 9 with perimeter 22 feet
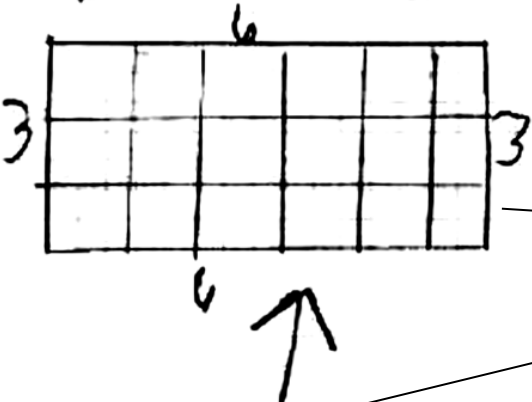   3 by 6 with perimeter 18 feet

Score Point 4 (Example A)

A: Perimeter=is 20 Feet

B: Area= is 18 square feet
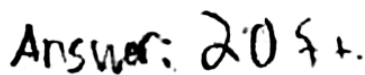

C: 18 Feet is the perimeter of this shape.

a) Student's answer is correct, with correct unit of measure. (1 point)

b) Student's answer is correct, with correct unit of measure. (1 point)

c) Student gives a correct perimeter, with correct unit of measure, and work is shown by the diagram. (2 points)

SCORE POINT 4 (EXAMPLE B)

A) 20 ft

b) Student's answer is correct, with correct unit of measure. (1 point)

18 square feet

B)

C) 22 ft

a) Student's answer is correct, with correct unit of measure. (1 point)

c) Student gives a correct perimeter, with correct unit of measure, and work is shown by the diagram. (2 points)

SCORE POINT 3 (EXAMPLE A)

a

Answer: 20 ft.

a) Student's answer is correct, with correct unit of measure. (1 point)

b.

18 ft

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).

C.

3 ft

6 ft   6

3 ft

Answer: 18 ft.

c) Student gives a correct perimeter, with correct unit of measure, and work is shown by the diagram. (2 points)
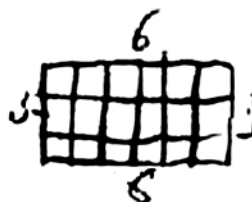
SCORE POINT 3 (EXAMPLE B)

$$\begin{array}{r} 20 \\ \times\ 1 \\ \hline 20 \end{array}$$

20ft is the perimeter

18ft is the area

$$\begin{array}{r} 4 \\ \times\ 6 \\ \hline 24 \\ -\ 6 \\ \hline 18 \end{array}$$

$$\frac{3}{6}\ \frac{6}{18}$$

18 is the perimeter

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).

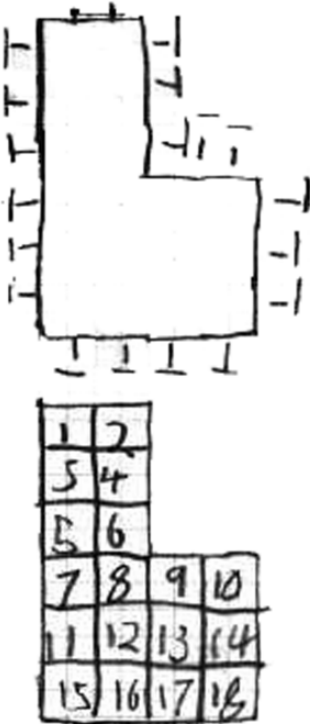a) Student's answer is correct, with correct unit of measure. (1 point)

c) Student gives a correct perimeter with work shown by the diagram (2 points), but omits unit of measure (deduct $\frac{1}{2}$ point).
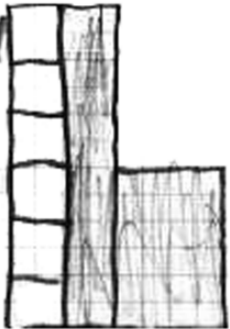
SCORE POINT 2 (EXAMPLE A)

a)

−| = | block
block = |.ft

They're 2,0,
feet in perimiter
in the garden.

> a) Student's answer is correct, with correct unit of measure. (1 point)

1	2		
3	4		
5	6		
7	8	9	10
11	12	13	14
15	16	17	18

They're 18
square feet in tha
garden.

> b) Student's answer is correct, with correct unit of measure. (1 point)

The non shaded
area has the
Same amount of
perimiter feet as
square feet.

> c) Student does not give a correct perimeter and does not show appropriate strategy in solving the problem. (0 points)

21

SCORE POINT 2 (EXAMPLE B)
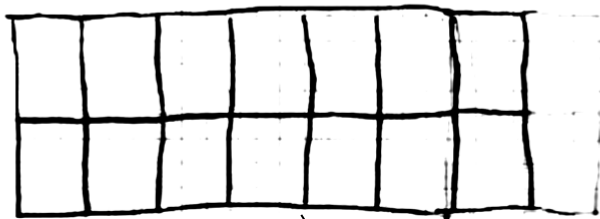
.|a|

Perimiter: 20 Ft.

a) Student's answer is correct, with correct unit of measure. (1 point)

b|

area 18 Ft.

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).

c

c) Student does not give a correct perimeter and does not show a sufficient strategy in solving the problem. (0 points)

SCORE POINT 1 (EXAMPLE A)

16 ft

a) Student's answer is incorrect. (0 points)

18 ft

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).

14A

c) Student does not give a correct perimeter and does not show a sufficient strategy in solving the problem. (0 points)

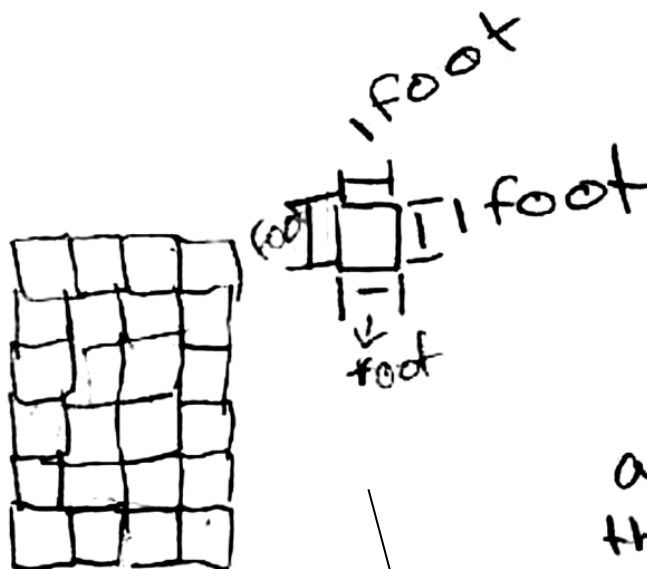I cut off part and put it in a different place

Score Point 0 (Example A)

Perimete: 6x4
area: 36 Feet

a) Student's answer is incorrect. (0 points)

b) Student's answer is incorrect. (0 points)

1foot

1foot

foot

foot

I drew a rectangle the same area of the garden that is shown.

c) Student does not give a perimeter (0 points) and diagram is neither correct based on part b nor correct based on a rectangle that has the same area as the garden (0 points).

SCORE POINT 0 (EXAMPLE B)

72 is the perimeter

64 is the area

48 is a rectangles perimeter.

a) Student's answer is incorrect. (0 points)

b) Student's answer is incorrect. (0 points)

c) Student neither gives a correct perimeter based on part b nor gives a correct perimeter of a rectangle that has the same area as the garden (0 points), and does not a show a sufficient strategy in solving the problem (0 points).

I know because I added up all the blocks by 4.